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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/568,080	02/13/2006	Renato Caponi	099520018	7439

22852 7590 11/21/2007
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EXAMINER

DIACOU, ARI M

ART UNIT	PAPER NUMBER
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3663

MAIL DATE	DELIVERY MODE
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11/21/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/568,080	Applicant(s) CAPONI ET AL.	
	Examiner Ari M. Diacou	Art Unit 3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 29-56 is/are pending in the application.
- 4a) Of the above claim(s) 44-48 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 29-43 and 49-56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Claims 44-48 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 9-25-2007.
2. While applicant elected species A, drawn to claims 29-43 and 46-56, examiner has withdrawn claims 46-48 because applicant has no disclosure of a Raman amplifier that is co- and counter- pumped.
3. Applicant's election with traverse of claims 29-43 and 49-56 in the reply filed on 9-25-2007 is acknowledged. The traversal is on the ground(s) that:
 - A. On page 1, that "The Examiner did not identify any pending claims in either of these two identified claim groups."
 - B. On page 2, that "the Examiner has not established that claims in Groups A and B are independent or distinct."
 - C. On page 2, that "examination of dependent claims 44 and 45 (i.e., Group B) would not impose any serious additional burdens on the Examiner."
 - D. On page 3, that "claim 29 is a 'linking claim'".
4. This is not found persuasive because:
 - Argument A is unconvincing, identifying claims beforehand is not a requirement of a proper election requirement.

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- Argument B is unconvincing, a proper traversal of examiner's allegation of distinctness would be to say that "the species are indistinct and *obvious over one another.*"
- Argument C is unconvincing, searching both types of third stage is a serious burden.
- Argument D is unconvincing, claim 29 is not a linking claim, it is a generic claim. In any case however, claim 29 is not yet allowable, nor is it certain if claim 29 will remain generic throughout prosecution.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 29-36, 38-40, 43, 50-53, and 55-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Evans (USP No. 6310716) in view of Ohishi et al. (USP No. 2002/0080474).

- Regarding claim 1, Evans discloses a multi-stage optical amplifier to amplify a transmission signal including a signal wavelength comprising
 - a first amplifying stage including a rare-earth doped optical active fiber;
 - a second amplifying stage connected to said first amplifying stage, said second amplifying stage comprising an active fiber doped with a rare earth element; and
 - a third amplifying stage connected with said second amplifying stage, said third amplifying stage including a silica-based fiber

but fails to disclose the second stage being tellurite-based. Evans does however teach placing any two stage amplifier in place of module 30A and 30B. Ohishi

teaches a two stage amplifier with a first silica-based EDF 204 and second tellurite EDF 205 [Fig. 31]. Therefore, it would have been obvious to one skilled in the art (e.g. an optical engineer) at the time the invention was made, to use the tellurite EDF of Ohishi, for the advantage of having longer meta-stable states provided by tellurite EDF's.

- Regarding claim 30, Evans discloses [Fig. 1].
- Regarding claims 31-32, Evans discloses an L-Band lower path in figure 1.
- Regarding claims 33-36 and 38-40, Ohishi discloses [Fig. 31] and [¶ 0421- 0433].
- Regarding claim 49, Evans discloses [Abstract].
- Regarding claim 50, Evans discloses [Col. 5, line 23]
- Regarding claim 51, Evans discloses [Fig. 1, #22A]
- Regarding claim 52, Evans discloses [Fig. 1, #22 – 24 – 25 – 24A – 18]
- Regarding claim 53, Evans discloses [Claim 6].
- Regarding claims 55 and 56, Evans discloses [Fig. 1, #20B]

9. Claims 37 and 41-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohishi and Evans as applied to claims 29-36, 38-40, 43, 50-53, and 55-56 above, and further in view of official notice. Ohishi and Evans disclose the invention with all the limitations of claims 29 and 35, but fail to disclose double pumping an EDF stage or pumping at 980 nm. Official notice is taken that co- counter- and double-pumping an EDF with 980 nm, 1480 nm or both is well-known in the art, each strategy having advantages that are well-known in the art. Therefore, it would have been obvious to one

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skilled in the art (e.g. an optical engineer) at the time the invention was made, to modify the pumping schemes of Ohishi or Evans, for the advantage of better control of the gain spectral profile.

10. Claim 54 is rejected under 35 U.S.C. 103(a) as being unpatentable over Evans and Ohishi as applied to claims 29-36, 38-40, 43, 50-53, and 55-56 above, and further in view of Evans. Ohishi and Evans discloses the invention with all the limitations of claim 29, but fail to explicitly disclose a GFF between the Raman and EDF stages. Evans does teach that a GFF can be placed between the two EDF stages, and thereby implying a benefit to GFF's between amplifying stages [Col. 5, lines 47-50]. Therefore, it would have been obvious to one skilled in the art (e.g. an optical engineer) at the time the invention was made, to place a GFF between the DRA and EDFA of Evans, for the advantage of smoothing the gain spectral profile.

Conclusion

11. The references made herein are done so for the convenience of the applicant. They are in no way intended to be limiting. The prior art should be considered in its entirety.

12. The prior art which is cited but not relied upon is considered pertinent to applicant's disclosure.

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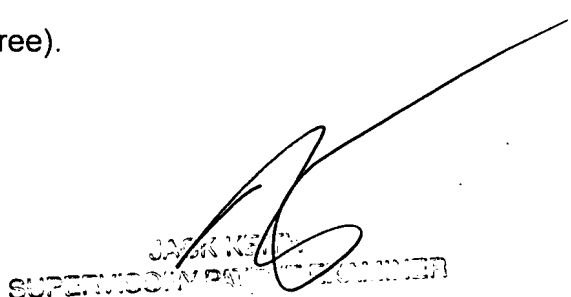
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ari M. Diacou whose telephone number is (571) 272-5591. The examiner can normally be reached on Monday - Friday, 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on (571) 272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/AMD/

19-Nov-07


JACK KEITH
SUPERVISOR